

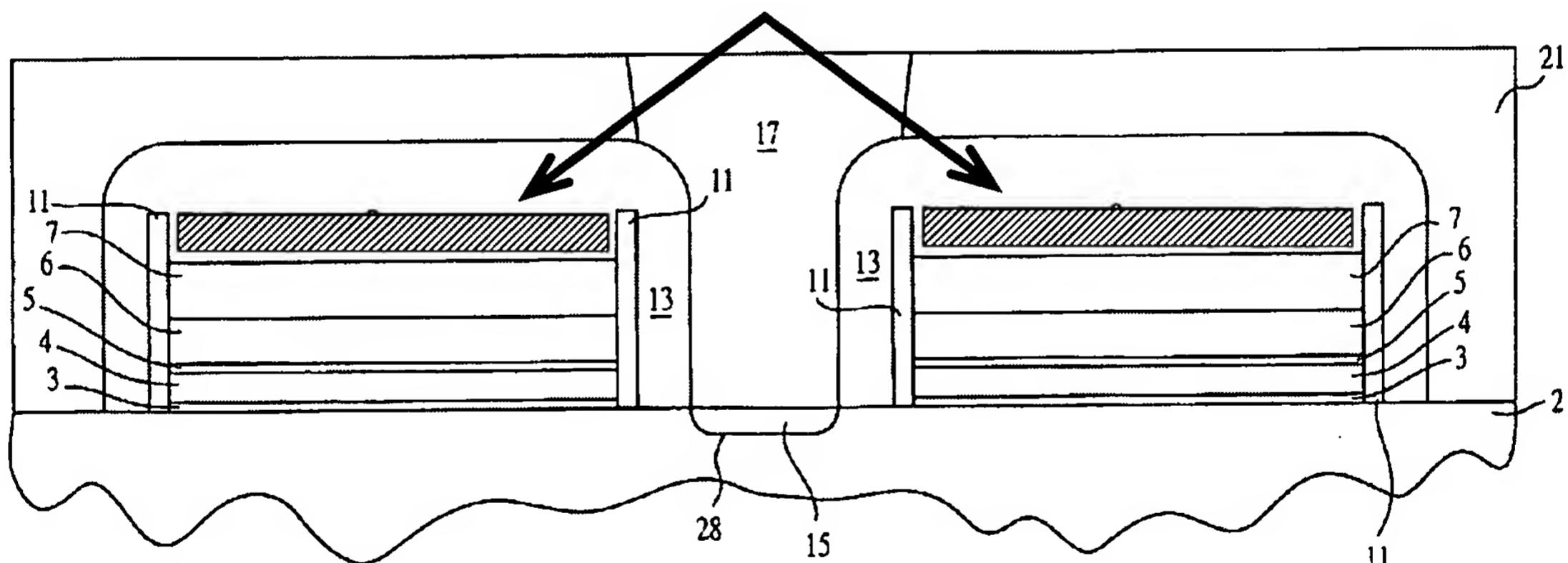
REMARKS

Claims 9-13 and 66-79 are pending. Claim 9 has been amended. Claims 67-79 have been added. Applicant reserves the right to pursue the original and other claims in this and any other application.

Claims 9-12 and 66 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sung et al. (U.S. Patent No. 5,631,179) (“Sung”). The rejection is respectfully traversed.

Claim 9 recites a memory device comprising, “a respective nitride layer overlaying and in contact with each said vertical oxide spacer and a top layer of each said gate stack, wherein ... a portion of said nitride layer is situated between respective vertical oxide spacers” (emphasis added).

The underlined limitation is illustrated by Applicant’s FIG. 6, which is reproduced below with annotations to highlight the portion of nitride layer 8 between the respective vertical oxide spacers 11.



Applicant’s FIG. 6

By contrast, Sung discloses a nitride layer 29/18 outside and above vertical oxide spacers 28. (FIG. 1A) According to Sung, the nitride layer cannot possibly be between the vertical oxide spacers because a polycide layer 14 is located between and extends to the top of the vertical oxide spacers. (FIG. 1A and Col. 5, Lines 1-5) Indeed, Sung teaches forming yet another layer – a TEOS

glass layer 16 – on top of the polycide layer 14. The TEOS glass layer 16 further removes the nitride layer 18 from the area between the vertical oxide spacers. Sung does not disclose that “a portion of said nitride layer is situated between respective vertical oxide spacers” as claimed. Therefore, the rejection of claim 9 should be withdrawn and the claim allowed.

Claim 10-12 and 66 depend from claim 9 and are allowable along with claim 9 for at least the reasons stated above with respect to claim 9 and on their own merits. Therefore, the rejection of claim 10-12 and 66 should be withdrawn and the claims allowed.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sung. The rejection is respectfully traversed.

Claim 13 depends from claim 9 and adds the limitation, “wherein each said respective nitride layer has a thickness equal to about one half the width of each said vertical oxide spacer.”

The Office Action concedes Sung does not teach that the “nitride layer has a thickness equal to about one half the width of each said vertical oxide spacer.” Rather, the Office Action merely asserts, without any factual foundation, that claim 13 is “considered obvious” unless the Applicant can “show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.” (Page 4)

The specification does, however, show that the claimed range is critical. More specifically, the thickness is “an amount which is sufficient to fill the etched out portion of the seam with nitride while minimizing the amount of nitride deposited outside the seam.” (Paragraph [0032]) A lesser thickness would leave a depression in the surface of each stack which might interfere with deposition of a dielectric over and around each stack. (See FIG. 6, Element 21) A greater thickness would unnecessarily deposit nitride outside the seam and potentially interfere with subsequent plasma etching and SAC contact 17 formation. (FIG. 6) Moreover, and as discussed above, Sung fails to teach or render obvious other limitations of claim 13 inherited from base claim

9. For at least all of these reasons, Applicant respectfully submits that claim 13 is not obvious over Sung. Therefore, the rejection of claim 13 should be withdrawn and the claim allowed.

New claims 67-69 depend from claim 9 and are allowable along with claim 9 for at least the reasons stated above with respect to claim 9 and on their own merits. Therefore, claims 67-69 should also be allowed.

New claims 70-79 recite similar limitations as claim 9 and are believed to be allowable over Sung for at least the reasons stated above with respect to claim 9 and on their own merits. Therefore, claim 70-79 should also be allowed.

In view of the above, Applicant submits the application is in condition for allowance and respectfully requests that it be passed to issue.

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Respectfully submitted,

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